

ABSTRACT OF THE DISCLOSURE

A photoresist with adjustable polarized light response and a photolithography process using the photoresist. The photoresist and the photolithography process are suitable for use in an exposure optical system with a high numerical aperture. The photoresist includes a photosensitive polymer that can absorb the exposure light source to generate an optical reaction. The photosensitive polymer can also be oriented along a direction of an electric field or a magnetic field. The response for the photosensitive upon a polarized light is determined by an angle between the predetermined direction and the polarized light. In addition, the photolithography process adjusts the orientation of the photosensitive polymer, so that the P-polarized light has a weaker response than that of the S-polarized light to compensate for the larger transmission coefficient of the P-polarized light with a high numerical aperture, so as to prevent the photoresist pattern deformation.

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